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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/556,092

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Markus Oles

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EXAMINER

LIGHTFOOT, ELENA TSOY

ART UNIT

PAPER NUMBER

1792

NOTIFICATION DATE

DELIVERY MODE

09/16/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/556,092	<b>Applicant(s)</b> OLES ET AL.	
	<b>Examiner</b> Elena Tsoy Lightfoot	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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***Response to Amendment***

Amendment filed on June 30, 2009 has been entered. New claims 6-19 have been added. Claims 1-19 are pending in the application. Claims 4-5 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claims examined on the merits are 1-3, and 6-19.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-3, and 6-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 recites a component ii) being “a mixture of a) an oligomer of a fluorosilane or a fluorosiloxane, and b) a fluorosilane or a fluorosiloxane”, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Rejection of claims 1-3 under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01 has been withdrawn due to amendment.
5. Rejection of claims 1-3 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been withdrawn due to amendment.
6. Claims 1-3, and 6-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites “i) an oligomer of a fluorosilane or a fluorosiloxane”, which is confusing because it is not clear whether it means (1) “a fluorosiloxane or an oligomer of a fluorosilane” or (2) “an oligomer of a fluorosilane or an oligomer of a fluorosiloxane”. For examining purposes the phrase was interpreted as (1) since the specification as originally filed discloses that fluorosiloxan is oligomerized fluorosilane (See P25-26 of Published Application).

Claim 1 further recites a component ii) being “a mixture of a) an oligomer of a fluorosilane or a fluorosiloxane, and b) a fluorosilane or a fluorosiloxane”. If component i) is interpreted as (1), the component ii) would read on “a mixture of a) a fluorosiloxane, and b) a fluorosiloxane”. Thus, components i) and ii) contradict each other and the disclosure of the Applicants specification.

#### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Rejection of claims 1-3 under 35 U.S.C. 102(b) as being anticipated by Nun et al (US 20020150724) has been withdrawn due to amendment.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-3, and 6-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baumann et al (WO01/74739).

Examiner Note: for convenience, instead of WO01/74739, the Examiner will refer to US 6,872,441 of the same patent family.

Baumann et al discloses a method for producing surfaces which have self-cleaning properties comprising coating the surface of glass, ceramic or metal substrate with a layer containing a glass flux and structure-forming particles with a mean particle diameter within the 0.1 to 50  $\mu\text{m}$  range, burning the layer to fix the microparticles to provide a layer with a micro-rough surface structure (See Abstract), i.e. a structure with elevations and depressions in a geometrical or random, preferably random arrangement (See column 3, lines 5-8) with the mean profile height within the 0.2 to 10  $\mu\text{m}$  range, preferably 1-10  $\mu\text{m}$ , although values outside those limits are not excluded (See column 3, lines 16-21) and the ratio of the mean profile height to the mean distance between adjacent profile tips within the 0.3 to 10 range, preferably within the 1 to

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5 range and particularly preferably within the 1 to 2 range (See column 3, lines 27-33), and applying fluorine-containing silanes and siloxanes (See column 6, lines 25-26) to the burnt-in layer to make the surface hydrophobic (See column 5, lines 8-10). It is particularly desirable for the surface to be made hydrophobic using reactive alkyl or preferably fluoroalkyl silanes and oligomeric alkyl or fluoroalkyl siloxanes, preferably containing one or more alkoxy groups such as ethoxy groups as the reactive group such as tridecafluorooctyltriethoxy silane and oligomers thereof (Dynasilanes® produced by Sivento Chemie Rheinfelden GmbH) (See column 6, lines 36-40).

As to claimed ranges, note that particle diameter, elevation height and separation ranges of Baumann et al overlap claimed ranges. It is well settled that overlapping ranges are prima facie evidence of obviousness. It would have been obvious to one having ordinary skill in the art to have selected the portion of Baumann et al's range that corresponds to the claimed range.

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It is the Examiner's position that the produced surfaces would have claimed properties including self-cleaning, oleophobic, lipophobic and lactophobic properties, since the surfaces would be produced by the process substantially identical to that of claimed invention.

As to claim 2, any products may be present as structure-forming particles; their melting point is above the firing temperature and the structure is preferably idiomorphic, i.e. when they have pronounced edges and faces (See column 4, lines 14-17). Some examples of structure-forming particles are oxides and silicates such as zirconium silicates, zeolites, SiO<sub>2</sub> (See column 4, lines 21-26). It is well known in the art that SiO<sub>2</sub> particles comprise fumed silicas or precipitated silicas.

11. Claims 1-3, and 6-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nun et al (US 20020150724) in view of Baumann et al '739.

Nun et al discloses a method for producing surfaces which have self-cleaning properties and a surface structure with elevations which are formed by the microparticles (See P14), the method comprising: hydrophobizing microparticles with fluoroalkylalkoxysilanes such as tridecafluorooctyltriethoxysilane (Dynasilan 8262, Sivento GmbH) (See P52) to form a surface structure, the surface structure having elevations with a mean height within a range 1-1000 nm, e.g. 500 nm and a mean separation within a range 1-1000 nm, e.g. 1200 nm, the microparticles having a particle diameter of 700 nm (See Fig. 3 and P20 and 22).

Nun et al fails to teach that the use of an oligomer of fluoroalkoxysilane (Claim 1).

Baumann et al teaches that tridecafluorooctyltriethoxy silane and oligomers thereof (Dynasilanes® produced by Sivento Chemie Rheinfelden GmbH) may be used as hydrophobizing agent for coating microstructured surface to provide a self-cleaning surface (See

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column 6, lines 36-39). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used oligomers of tridecafluorooctyltriethoxy silane as hydrophobizing agent in Nun et al with the expectation of providing the desired self-cleaning surface, as taught by Baumann et al since Baumann et al teaches that tridecafluorooctyltriethoxy silane and oligomers thereof may be used as hydrophobizing agent for coating microstructured surface to provide a self-cleaning surface. Moreover, it is held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07.

As to claimed ranges, note that particle diameter, elevation height and separation ranges of Baumann et al overlap claimed ranges. It is well settled that overlapping ranges are prima facie evidence of obviousness. It would have been obvious to one having ordinary skill in the art to have selected the portion of Nun et al's range that corresponds to the claimed range.



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It is the Examiner's position that the produced surfaces would have claimed properties including self-cleaning, oleophobic, lipophobic and lactophobic properties, since the surfaces would be produced by the process substantially identical to that of claimed invention.

As to claim 2, Nun et al teaches that the particles preferably comprise fumed silicas or precipitated silicas (See P24).

As to claim 3, Nun et al teaches that excellent results are produced when used for producing self-cleaning surfaces on planar or nonplanar objects, e.g. greenhouses of glass or Plexiglas® (claimed plastic article) (See P48), umbrellas or shower curtains (claimed plastic article) (See P49).

As to claims 13, 15, and 19, Nun et al teaches that the particles may be secured to the surface using a carrier (See P27) curable by polymerization or crosslinking by means of thermal energy and/or the energy in light, the mixing ratios of the carrier and particles varying within wide boundaries (See P28).

### ***Response to Arguments***

12. Applicant's arguments with respect to claims 1-3, and 6-19 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy Lightfoot whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy Lightfoot, Ph.D.  
Primary Examiner  
Art Unit 1792

September 14, 2009

/Elena Tsoy Lightfoot/